

REMARKS

Prior to the present amendment, Claims 42-61 were pending in the application.
Claims 58-61 were withdrawn from consideration, and claims 42-57 were rejected.

Amendment

Claim 42 has been amended to incorporate elements that find support as follows:

Aspect	Antecedent basis (reference to published application 2007/0141230)
fertilizer	Paragraph [0005], [0016], [0049]
poultry waste material	Paragraph [0002]
membrane filter having a pore size ranging from 10 Å to 50 Å	Paragraph [0040]
spray drying the concentrate	Paragraph [0013], [0044]
substantially all of the peptones in the concentrate have a molecular weight of at least about 1,000 Daltons	Paragraph [0040]
at least 75% of the peptones in the concentrate have a molecular weight between 1000Da and 6000 Da	Paragraph [0056], [0084], [0104], original claim 32.
mixture of peptones in the concentrate has a solubility in water of at least about 0.05 gm/ml	Original claim 33.

Claims 43, 50-51, 53-55, 57 and 60-61 have been cancelled without prejudice in order to expedite prosecution of the present application.

Claim Rejections – 35 USC § 112

Claims 53 and 55 have been rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The Office Action states that the claims are indefinite because of the term “substantially.”

The term “substantially” is used in the present specification in the well established manner in patent law. For example:

Expressions such as "substantially" are used in patent documents when warranted by the nature of the invention, in order to accommodate the minor variations that may be appropriate to secure the invention.

Verve, LLC v. Crane Cams, Inc., 311 F.3d 1116, 1120 (Fed. Cir., 2002)

"The term 'substantial' is a meaningful modifier implying 'approximate,' rather than 'perfect.'" Liquid Dynamics Corp. v. Vaughan Co., Inc., 355 F.3d 1361, 1368 (Fed.Cir.2004).

In the present application, the meaning of the term "substantially" is clear not only from conventional usage of this term, but in the context of the present specification. Thus, the skilled artisan would expect that a separation of materials into compositions comprising peptones of different molecular weights based on a filtration technique using a membrane having a specified pore size is likely to result in compositions that contain some trace amounts of peptone material outside of the designated range. The presence of such outlier peptone ingredients in any given composition can obviously occur for any of a number of reasons that will be apparent to the skilled artisan. The use of the term "substantially" in the context of the present technology therefore is both definite and indeed is eminently appropriate.

Claim Rejections – 35 USC § 102

Claims 42, 45-57, 50, and 53-55 have been rejected under 35 U.S.C. 102(b) as being anticipated by Naito et al. (U.S. Patent No. 4,591,497).

The present claims as amended to describe a method for processing a protein-containing material to produce a water soluble fertilizer. This process comprises reacting a poultry waste material and an alkaline material, separating the reaction product by filtration using a membrane filter having a pore size ranging from 10 Å to 50 Å, spray drying the concentrate, and formulating a water soluble fertilizer using the spray dried concentrate. Substantially all of the peptones in the concentrate have a molecular weight of at least about 1,000 Daltons, at least 75% of the peptones in the concentrate have a molecular weight between 1000Da and 6000 Da, and the mixture of peptones in the concentrate has a solubility in water of at least about 0.05 gm/ml.

Naito discloses an odor-removing and deodorizing composition, which comprises as its effective component a hydrolysate of keratin material. See the abstract. The examples describe preparation of the hydrolysates of keratin material by heating feathers in an autoclave under conditions to puff the feathers, admixing with caustic soda, followed by hydrolysis at 60°C for 18 hours, and filtering the reaction solution. The resulting product is used as an odor removing and deodorizing composition in materials having offensive odors, such as hair permanent wave solutions. See the examples.

Naito does not describe preparation of a water soluble fertilizer. It is respectfully submitted that Naito does not anticipate the presently pending claims.

Claim Rejections – 35 USC § 103

Claims 42-57 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Naito et al. (U.S. Patent No. 4,591,497) and Kawasaki (WO 90/01023 as cited in IDS 12/15/05 cite B1) and Blanch et al, (Biochemical Engineering, 1997, Marcel Dekker, pages 467-468).

The present method provides a surprising product from poultry waste material in the form of a water soluble fertilizer. The unique process of isolating the peptone concentrate using this concentrate to formulate the fertilizer is discussed above, and so therefore will not be repeated. As explained in the Article copied from *Cargill News*, July-August 2008, "Changing the playing field," in particular the water solubility and the molecular weight distribution of the product resulting from the present method has significant advantages when the peptone mixture is used as a fertilizer. Specifically, exceptional fertilization properties flow from the characteristics of the product, which include (1) slow release of the desired nutrients and (2) the ability to provide an exceptional fertilizer product that is applicable to the site in need of fertilization by spray application.

In prior art fertilizer compositions, the nitrogen component is provided by small molecules. Because of the small size of these molecules, the nitrogen as applied generally is not available to the plant, but rather leaches into the ground water. In contrast, the structure of the fertilizer prepared using the concentrate of the present method is larger and provide for slow release of the nitrogen to the plant. Thus, due to

the structure of the concentrate of the present method, superior fertilization properties are achieved.

Additionally, concentrate of the present method is water soluble, which provides specific advantages in the formulation of fertilizer compositions. Many prior art fertilizer compositions are granular in nature as applied to the site in need of fertilization. Because the present concentrate is water soluble, it can be formulated in a liquid, sprayable form that is much easier to apply and provides better coverage than dry form fertilizers. Thus, the present invention meets a significant need in the market where the majority of organic fertilizers are provided as granules that cannot be easily transformed into a sprayable solution.

Naito discloses an odor-removing and deodorizing composition, which comprises as its effective component a hydrolysate of keratin material. See the abstract. The examples describe preparation of the hydrolysates of keratin material by heating feathers in an autoclave under conditions to puff the feathers, admixing with caustic soda, followed by hydrolysis at 60°C for 18 hours, and filtering the reaction solution. The resulting product is used as an odor removing and deodorizing composition in materials having offensive odors, such as hair permanent wave solutions. See the examples.

Kawasaki describes a process for yielding peptone products by treatment of feathers, hair, wool and other materials that are composed substantially of keratin. The products prepared by Kawasaki are taught to be used as animal feed supplements and therapeutically in human and veterinary medicine. See the Abstract. Kawasaki does not describe preparation of a water soluble fertilizer.

Blanch is cited for its teaching regarding the use of filtration as a means of purification, and the use of microporous membranes. Blanch does not describe preparation of a water soluble fertilizer.

The skilled artisan would have had no reason to consider making a fertilizer composition comprising a peptone concentrate as prepared using the presently claimed process from the teachings of Naito in combination with Kawasaki and Blanch. None of these references teach the preparation of a water soluble fertilizer. In particular, the skilled artisan could not have predicted that a fertilizer prepared from the present process


would exhibit the exceptional fertilization properties of slow release of the desired nutrients in a spray application format, which properties are possible due to the chemical structure that flows from the present process.

Conclusion

In view of the above amendments and remarks, it is respectfully submitted that the foregoing is fully responsive to the outstanding Office Action. Examination of all claims together, and early favorable consideration and passage of the above application to issue is earnestly solicited. In the event that a phone conference between the Examiner and the Applicant's undersigned attorney would help resolve any issues in the application, the Examiner is invited to contact said attorney at (651) 275-9811.

Respectfully Submitted,

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